WHAT IS CLAIMED IS:

1. A bulkhead panel for use in a combustion chamber of a gas turbine engine, said bulkhead panel comprising:

a first side and a second side;

a plurality of panel holes extending from said first side to said second side through which cooling air flows; and

a circumferential inner rail on said first side dividing said first side into a first cavity region containing a plurality of said panel holes and a second cavity region containing a plurality of said panel holes.

2. A bulkhead panel according to claim 1, wherein said first side comprises a cold side and said second side comprises a hot side exposed to combustion gases.

3. A bulkhead panel according to claim 1, wherein said panel holes in said first cavity region are arranged in a plurality of circumferential rows.

4. A bulkhead panel according to claim 3, wherein said panel holes in said second cavity region are arranged in a plurality of circumferential rows.

5. A bulkhead panel according to claim 1, wherein each of said panel holes has an exit nozzle which has a compound angle which includes an axial component and a radial component angled at an angle in the range of pure tangential to pure radial.

6. A bulkhead panel according to claim 1, wherein each of said panel holes has an exit nozzle which is angled to create a swirling flow of cooling air.

7. A bulkhead panel according to claim 6, wherein said swirling flow of cooling air created by said panel holes flows in a clockwise direction.

8. A bulkhead panel according to claim 1, further comprising a plurality of posts on said first side for enabling said panel to be attached to a bulkhead support shell.

9. A bulkhead panel according to claim 1, further comprising a center opening for receiving a fuel injector and a fuel injector guide.

10. A bulkhead panel according to claim 1, wherein said center opening has a central lip which defines said first cavity region with said inner circumferential rail and said first cavity region comprising a sealed chamber when said central lip and said inner circumferential rail are placed in contact with a bulkhead support shell.

11. A bulkhead panel according to claim 10, wherein said central lip has a length greater than a length of said inner circumferential rail.

12. A bulkhead panel according to claim 11, further comprising an outer peripheral rail and said outer peripheral rail forming said second cavity region with said inner circumferential rail and said second cavity region comprising a sealed chamber when said peripheral rail and said inner circumferential rail are placed into contact with said bulkhead support shell.

13. A bulkhead panel according to claim 1, further comprising integrally formed inner and outer lips on said second side.

14. A bulkhead panel according to claim 1, further comprising

an outer edge, an inner edge, and a pair of radially extending side edges between said inner and outer edges.

15. A bulkhead panel according to claim 14, wherein each of said outer and inner edges is curved and each of said radially extending side walls is linear.

16. A combustor for use in a gas turbine engine comprising:

an inner support shell and an outer support shell;

said inner support shell and said outer support shell defining a combustion chamber;

a bulkhead assembly at a front end of said combustion chamber;

said bulkhead assembly including a bulkhead support shell and at least one panel attached to said bulkhead support shell; and

said at least one panel having a first side and a second side, a plurality of panel holes extending from said first side to said second side through which cooling air flows, and a circumferential inner rail on said first side for dividing said first side into a first cavity region containing a plurality of said panel holes and a second cavity region containing a plurality of said panel holes.

17. A combustor according to claim 16, further comprising:

a liner attached to each of said inner and outer support shells;

an annular cavity formed by said inner and outer support

shells and said liners; and

inner and outer lips on said at least one panel for channeling air exiting said annular cavity toward a hot surface of said liners.

18. A combustor according to claim 16, further comprising:

said at least one panel having a central opening; and

a fuel injector and a fuel injector guide projecting through said central opening.

19. A combustor according to claim 16, further comprising means, on said first side, for securing said at least one panel to said bulkhead support shell.

20. A combustor according to claim 16, wherein said panel holes in said first and second cavity regions are arranged in a plurality of circumferential rows.

21. A combustor according to claim 16, wherein each of said panel holes has an exit nozzle which has a compound angle which includes an axial component and a radial component angled at an angle in the range of pure tangential to pure radial.

22. A combustor according to claim 16, wherein each of said panel holes has an exit nozzle configured to create a swirling flow of cooling air over said second side of said at least one panel.

23. A combustor according to claim 16, wherein said at least one panel has an outer edge, an inner edge, and a pair of radially extending side walls between said inner and outer edges.

24. A combustor according to claim 23, wherein each of said outer and inner edges is curved and each of said radially extending side walls is linear.

25. A combustor according to claim 23, wherein said second side has an outer lip and an inner lip and a surface which is substantially planar between said inner and outer lips.

26. A combustor according to claim 16, further comprising a central opening in said at least one panel, said central opening being surrounded by a central lip, said central lip forming a boundary of said first cavity region, and said first cavity region comprising a first sealed chamber when said central lip and said inner circumferential rail are placed into contact with said bulkhead support shell.

27. A combustor according to claim 26, further comprising said at least one panel having a peripheral rail forming a periphery of said second cavity region and said second cavity region comprising a second sealed chamber when said inner circumferential rail and said peripheral rail are placed into contact with said bulkhead support shell.

28. A combustor according to claim 16, further comprising a plurality of impingement holes in said bulkhead support shell and said impingement holes being arranged to impinge air on said first side of said at least one panel between adjacent ones of said panel holes and between adjacent rows of said panel holes.